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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/803,496	03/08/2001	Bert L. Fransis	P2300	6057

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EXAMINER

TRAN, PABLO N

ART UNIT	PAPER NUMBER
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2685

DATE MAILED: 01/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/803,496	Applicant(s) FRANSIS, BERT L	
	Examiner Pablo N. Tran	Art Unit 2685	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 3, 10 and 17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-9, 11-16 and 18-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. Claims 1-14 recites the limitation "the sideband selection circuits". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
2. Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizumoto et al. (6,393,299) in view of Pascoe et al. (4,245,355) and further in view of Haruki et al. (4,246,539)

As per claims 1, 4-8, 11-15, and 18-21, Mizumoto et al. disclose a broadband TX/RX communication system having an antenna (fig. 1/no. 1, fig. 7/no. 1), a frequency converter apparatus (fig. 1/no. EX1, fig. 4/no. EX2, fig. 5/no. EX3, fig. 6/no. EX4) for RF signals coupled to the first number of signal bands by a first interface (see fig. 4, where it is clear that the multi input/output RF signals are to the left of the converter),

Art Unit: 2685

modulation circuitry (fig. 1/no. 8 & 12, fig. 7/no. 8 & 12) coupled to the converter by a second interface (multi input/output RF signals are to the right of the converter) for receiving or transmitting each of the bands at a common intermediate frequency, wherein the converter comprises a plurality of circuit elements (fig. 4/no. 41-42, 161-162) coupled to the first interface for up-conversion or down-conversion of the signals to and from an IF and a second number of on-chip voltage-controlled oscillator (fig. 4/no. 191-192, 201-201, fig. 7/no. 18-19) coupled to the circuit elements through one of frequency division circuitry for generating a local-oscillator signal to that circuit element for conversion between the IF frequency and the receive or transmit frequency for each band, and wherein the second number is less than the first number (It is clear that the number of VCO is less the numbers of frequency bands, see col. 5/ln. 44-col. 6/ln. 42), and the coupled VCOs provides different frequency to the circuit elements (fig. 1/no. EX1, fig. 4/no. EX2, fig. 5/no. EX3, fig. 6/no. EX4).

Mizumoto et al. do not specifically suggested that the converter is integrated on an IC. However, such is notoriously well known in the art, as suggest by Pascoe et al. (fig. 5A, col. 6ln. 14-16). Therefore, it would have been obvious to one of ordinary skill in the art to provide such IC frequency converter to the radio communication system of Mizumoto et al. in order to simplify the circuitry and thus facilitate fabrication but also reduce space and cost.

The modified radio communication system of Mizumoto et al. discloses such method of utilizing frequency multiplier (see Mizumoto et al., col. 9/ln. 29-34) but not explicitly a frequency doubling. However, such frequency doubling circuitry is

notoriously well known in the art, as taught by Haruki et al. (fig. 6/no. 19). Therefore, it would have been obvious to one of ordinary skill in the art to provide such frequency doubling circuitry couple to the VCO to the modified radio communication system of *Mizumoto et al.* in order to provide such RF frequency-matching dependent upon the requirements of the radio telecommunication system

As per claims 2, 9 and 16, the modified radio communication system of Mizumoto et al. further disclose the on-chip VCO, through alternative sideband selection, providing the LO frequency to two or more of the RF frequency bands (see Mizumoto et al., fig. 4/no. 191-192, fig. 7/no. 18-19, col. 5/ln. 44-col. 6/ln. 42).

Response to Arguments

3. Applicant's arguments with respect to claims 1, 8, and 15 have been considered but are moot in view of the new ground(s) of rejection.

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

Art Unit: 2685

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pablo Tran whose telephone number is (571)272-7898. The examiner normal hours are 9:30 -5:00 (Monday-Friday). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban, can be reached at (571)272-7899. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-directauspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PABLO N. TRAN
PRIMARY EXAMINER



AU2685

January 5, 2006